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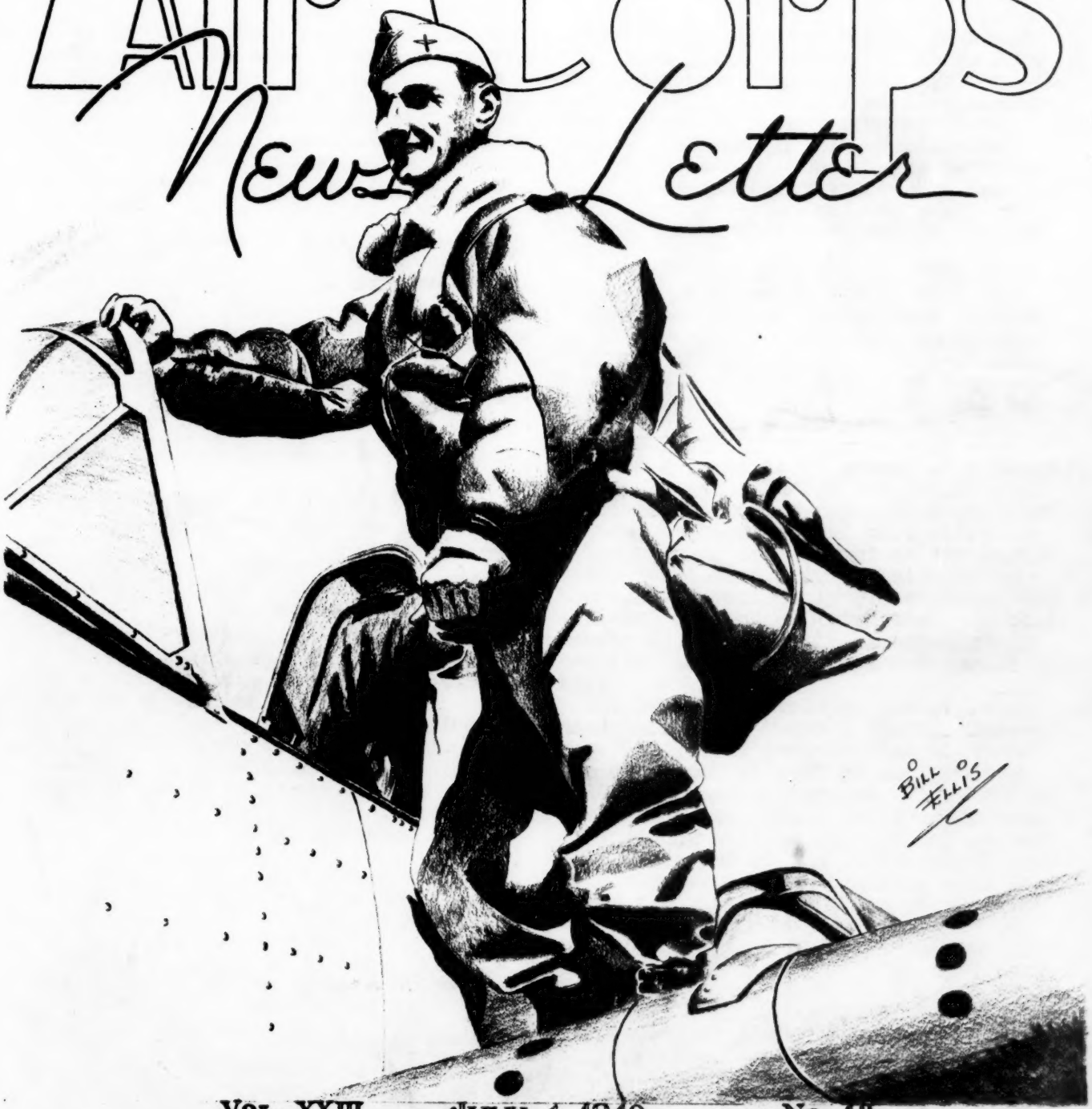

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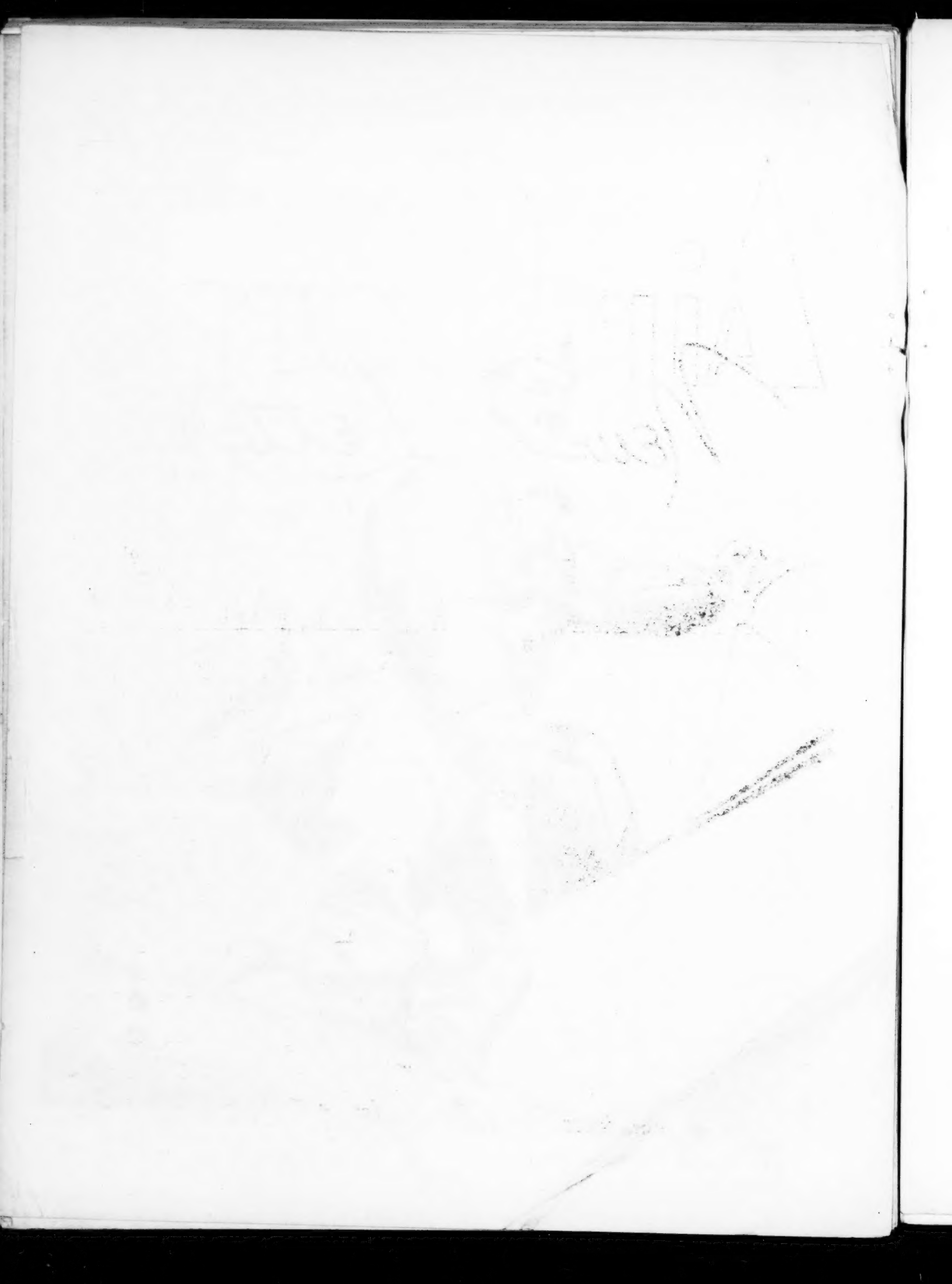

VOL. XXIII AIR CORPS NEWS LETTER NO. 13.

Information Division
Air Corps

July 1, 1940

Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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AUGMENTED PILOT TRAINING PROGRAM FOR AIR CORPS EXPANSION

The War Department announced, in connection with the Army expansion program recently authorized by Congress, that the Army Air Corps schools for training of pilots and officer-specialists have been enlarged and augmented, as follows:

The nine existing civilian schools for elementary pilot training will be continued. These are:

Alabama Institute of Aeronautics, Municipal Airport, Tuscaloosa, Ala.
Allan Hancock College of Aeronautics, Santa Maria, Calif.
Chicago School of Aeronautics, Curtiss Reynolds Airport, Glenview, Illinois.
Dallas Aviation School and Air College, Love Field, Dallas, Texas
Cal-Aero Training Corporation, Grand Central Air Terminal, Glendale, Calif.
Lincoln Airplane and Flying School, University Place, Lincoln, Neb.
Parks Air College, East St. Louis, Ill.
Ryan School of Aeronautics, Lindbergh Field, San Diego, Calif.
Spartan School of Aeronautics, Municipal Airport, Tulsa, Okla.

In addition to the above, the Air Corps will utilize new school facilities which will be operated at:

Jackson, Miss., affiliated with the Alabama Institute of Aeronautics.

Albany, Ga., affiliated with the Chicago School of Aeronautics.

Ricks Field, Fort Worth, Texas, affiliated with the Dallas Aviation School and Air College.

Oxnard, Calif., affiliated with the Cal-Aero Training Corporation.

Ontario, Calif., affiliated with the Cal-Aero Training Corporation.

Lakeland, Fla., affiliated with the Lincoln Airplane and Flying School.

Sikeston, Mo., affiliated with the Parks Air College.

Hemet, Calif., affiliated with the Ryan School of Aeronautics.

Hatbox Field, Muskogee, Okla., affiliated with the Spartan School of Aeronautics.

Graduates of the above civilian schools will be given basic, advanced, and specialized training at three Army Air Corps training centers. This will consist of transition from slow elementary planes to higher-powered combat planes, such as Pursuit, Bombardment and Observation. These three training centers are the existing one at Randolph Field, Texas, and two additional ones - in the southeast and on the West Coast.

The Gulf Training Center, with headquarters at Randolph Field, will continue operation of the present stations in that vicinity, including Randolph, Kelly and Brooks Fields. In addition, a new field will be opened at San Angelo, Texas, where training will begin on February 8, 1941.

The Gulf Training Center will also conduct a specialized school at a place yet to be selected for the training of multi-engine combat crews consisting of pilots, bombardiers and navigators.

The opening of a school at San Angelo, Texas, will result in the stationing there of approximately 870 officers and enlisted men and 200 students. Approximately $1,074,000 will be expended for construction of buildings and facilities.

The Southeast Training Center, with headquarters at Maxwell Field, Montgomery, Ala., will include that station; the Municipal Airport at Montgomery; Eglin Field at Valparaiso, Fla., and a field at Selma, Ala. Basic and advanced training will be carried out at Maxwell Field and at the Municipal Airport at Montgomery. This training will involve the stationing there of approximately 1135 officers and men and 350 students. Approximately a million dollars in construction will be necessary.

A specialized course in Pursuit training will be given in the Southeast Training Center at Selma, Alabama, and at Eglin Field, Fla. The course at Selma will include ground gunnery and will begin on March 15, 1941. Approximately 850 officers and enlisted men and 165 students will be stationed at Selma. The sum of $1,250,000 will be spent for

construction.

Pursuit tow target gunnery training will be given at Eglin Field, Fla., which will begin on April 1, 1941, with a class of approximately 55 students every five weeks.

The West Coast Training Center, with headquarters at Moffett Field, Calif., will include that station and an additional field at Stockton, Calif. Training at Moffett Field will commence on October 19, 1940.

Advanced training in the West Coast Training Center will begin at Stockton, Calif., about December 28, 1940, in courses of ten weeks' duration. The opening of this school will result in approximately 865 officers and enlisted men and 225 students being stationed at Stockton. Construction in the amount of slightly over $800,000 will be required.

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MUROC BOMBING RANGE CELEBRATES ORGANIZATION DAY.

Muroc Bombing Range, located in the heart of the famous Mojave Desert in California, held its first annual Organization Day on June 2nd. The gala affair was held at a former cattle ranch which has been taken over by the Army Air Corps and remodeled into a desert spa for officers and their families and enlisted personnel.

A cement storage tank for irrigation water was remodeled by the men in their spare time and, with the aid of the recreation fund available, a fine swimming pool resulted. The new pool is about 80 feet wide by 150 feet long, with a depth of 7 feet. The pool is quite a novelty here in the desert, which is famous for its lack of water. Desert miners and ranchers from surrounding cattle ranches shake their heads and reminisce that Uncle Henry didn't mention anything about swimming pools when he was in the Army back in '18. The pool has already paid for itself over and over again in relaxation for the personnel who are stationed out in the midst of America's largest desert. Says 2nd Lieut. Max R. Fennell, Commanding Officer of the Muroc Detachment: "There is nothing like a cool swim when the temperature gets around a hundred and twenty or more, which it very often does here."

In addition to opening officially their new swimming pool, Muroc personnel furnished a real old fashioned western style barbecue for their friends and visitors. Chief of the barbecue was Mr. Wierk, famous locally for his mastery of the art.

The entire affair had the aspects of a dude ranch fiesta. Side by side were desert miners, cattle ranchers, soldiers, city visitors, cowboys in chaps and spurs, and beautiful girls in their new swimming suits and latest Hollywood styles. The lowing of the cattle in the distance as they grazed on the open range, the giant Joshua trees towering their weird shapes overhead, the burning sands of the desert held at bay by a few shade trees, a hedge, a barb wire fence and a few straggling bunches of grass created a truly mixture of the old west, modern days, and the streamlined army.

Everyone pronounced the event a huge success and wished the local unit of the United States Army Air Corps at Muroc many more such successful organization days in years to come.

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MacDILL FIELD ACTIVITIES

Colonel Clarence L. Tinker, the Base Commander, and the officers of MacDill Field, Tampa, Fla., acted as hosts to the Tampa Rotary Club on June 4th, and the visitors were extended the privilege of partaking of an average G.I. (government issue) dinner. Following the meal, Colonel Tinker delivered a short talk, after which the Rotarians were shown through the barracks and other places of interest at the new field.

During the past two weeks, the administrative section of the 52nd Bombardment Squadron has reached the stage of smooth-running performance, and attention has been turned to the establishment of living quarters and a mess for the maintenance crews at Drew Field, the temporary center of flight operations of the Southeastern Air Base. Although the runways at MacDill Field will not be ready for use for a few months, S-2 reports that several mosquito squadrons have been conducting extensive night operations on the barracks at MacDill Field, with considerable injury to the enlisted men based there.

With recent increases in enlisted personnel which have brought the 6th Bombardment Squadron to full strength, the stage has been set for bombing and gunnery training scheduled to commence shortly. Since facilities at MacDill Field will not be ready for combat operations for a few months, the crews of this Squadron will operate from Drew Field, Tampa, Fla.

Tents have been erected to accommodate the enlisted personnel who will maintain the planes of this Squadron.

AUTOMATIC RELEASE FOR INSTRUMENT FLYING HOODS
By J.P. Callahan, Materiel Division

In an attempt to make instrument flying training safer in single-seater Pursuit type airplanes, there has been developed by the Materiel Division, Wright Field, an automatic release which is so arranged that the instrument flying hood will stay latched at indicated air speeds of from 130 to 230 m.p.h. only. At air speeds below 130 m.p.h. or above 230 m.p.h., the hood will be unlatched automatically and pulled out of the way by its elastic members. The release consists of three parts, wired electrically, and picturesquely designated the "brain," the "muscle" and the "latch."

The "brain" is a type D-2 stalling speed signal assembly with a range of adjustment of from 50 to 300 m.p.h. This unit is essentially a pitot-static air-speed indicator, the mechanism of which actuates two pairs of electrical contacts. Two adjusting knobs on the signal assembly may be set at the upper and lower values, respectively, of indicated air speed at which it is desired that the hood be released automatically. The knobs may then be locked in place.

The "muscle" is a starter meshing solenoid which opens the latch when the signal is given to it by the "brain." A relay is interposed between the signal assembly and the solenoid.

The "latch" is unique, as it incorporates an electrical switch and a simple manual release feature. The electrical switch remains open until the lug on the hood is inserted and closes the contacts. When this switch is open, there is no electrical power applied to any part of the release apparatus, and the fire hazard is decreased.

The manual release feature consists of the possibility of pulling the lug through the latch with a continuation of the latching movement of the hood. This was devised as a safety measure. If at any time it is desired to release the hood manually, the natural instinct of a pilot would be to pull on the hood handle, that being the part which he grips to raise the hood. Carrying through the natural instinct will produce results. The cam design of the latch pin is such that, although the hood is held closed securely by the latch against the action of the elastic cords built into it, when the pilot pulls on the hood handle he is able to pull the lug out of the latch.

Flight tests at the Materiel Division and a 90-day service test by officers of the 23rd Composite Group at Maxwell Field have been concluded with the recommendation that the automatic hood release be made a standard item for instrument flying training in single-seater Pursuit airplanes. The procurement of a quantity for service use is being initiated.

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WORK BEGUN ON AIRPORT AT ONTARIO, CALIF.

Plans for the material expansion of the Air Corps Training Detachment at Glendale, Calif., have been announced by Major C.C. Moseley, operator of Cal-Aero Flying School, and Captain K.P. McNaughton, Air Corps, Western District Supervisor of Flying Cadet training.

Five hundred workmen are rushing to completion in forty days Cal-Aero's new $300,000 airport at Ontario, Calif., while another group similarly are preparing an airport at Oxnard, Calif. General headquarters will be maintained at Glendale, while the Ontario and Oxnard fields will be commanded by Lieuts. R.L. Scott and John R. Kilgore, respectively.

Flying at Oxnard will begin on June 29th, and at Ontario on August 3rd, with greatly expanded classes of cadets assigned to all three bases.

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CADET PROCUREMENT CAMPAIGN

A vigorous Flying Cadet procurement campaign, launched by the Cal-Aero Public Relations Department in cooperation with Captain K.P. McNaughton, Commanding Officer of the Air Corps Training Detachment at Glendale, Calif., has for the past thirty days brought a daily average of over one hundred prospective cadets to the Detachment Headquarters.

Ten Southern California radio stations have contributed time on the air, and generous cooperation has been extended by the local newspapers.

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PROMOTION OF AIR CORPS OFFICERS

Effective June 1, 1940, eight Air Corps officers, holding temporary appointments in the grades indicated, received permanent appointments in such grades, namely: Colonel Ira A. Rader, Lieut. Colonel William O. Butler, Majors Carlyle H. Ridenour, Bennett E. Meyers, Paul H. Prentiss, Warren A. Maxwell, Frederick M. Hopkins, Jr., and Leonard D. Weddington.

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CAPTAIN ZIMMERMAN LEAVES RANDOLPH FIELD WEATHER OFFICE.

Captain Don Z. Zimmerman, Post Weather Officer at Randolph Field, Texas, since September 20, 1936, left that station on June 6th for duty at the U.S. Military Academy, West Point, N.Y.

The Randolph Field Correspondent states that to Captain Zimmerman is due full credit for the establishment of the modern weather office unit that is one of the "must see" points at the "West Point of the Air." Back in 1936, when the then Lieut. Zimmerman reported at Randolph Field, the personnel of the weather office consisted of two enlisted men, Privates 1st Class Treat and Spikes. A single weather map was prepared each day. Both men were without training in this highly technical work. Lieut. Zimmerman acted as both instructor and forecaster, and was also instructor in Meteorology in the Ground School.

Recently, Captain Zimmerman, after considerable research and perusal of commercial publications in Meteorology and related sciences, both American and foreign, completed a new contribution to the realm of Meteorology - the Weather Manual for Pilots. This text has drawn numerous compliments from outstanding meteorologists throughout the nation. A commercial publishing company has asked for the rights to publish the manual as a college text book.

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SOME TOLERABLY LARGE HAILSTONES

According to the Weather Office at Randolph Field, Texas, nine thunderstorms were reported since May 15,1940. Most of these were of mild or moderate intensity, with the exception of the last which is outstanding by its marked severity. There has been considerable controversy about the thunderstorm versus the airplane, and here are a few words upon the topic.

Hailstones of 6 by 4 centimeters were quite common in the hail that fell from the thunderstorm on May 28, 1940, between 5:00 and 5:15 p.m. Roughly, the diameter of such a hailstone is between two and three inches, and its weight is about 19 grams. It is left to the readers' imagination to determine the fate of an airplane in horizontal flight suddenly entering an uprising current of air, having a velocity of 204 to 244 miles per hour, which is necessary to bring about the formation of hailstones having diameters between two and three inches. The pressure exerted against one square foot may be as much as 400 pounds in winds from 200 to 250 miles per hour.

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DEPARTMENT COMMANDER INSPECTS FRANCE FIELD.

In the Panama Canal Zone, all Atlantic side Army posts, for the past several weeks, have been preparing for the inspection by Major General Van Voorhis and his staff. This is more than routine work to some of the organizations, but at France Field each Squadron is ready to be inspected at a moment's notice. The individual organization maintains crews that have been trained to perform their work as efficiently and neatly as possible. Of these many different squadrons located on France Field, the 3rd Bombardment Squadron is one of the top-notch units. Organized since February 1, 1940, the Third Bombardment Squadron has done excellent work and has been one of the outstanding units during the inspections by different War Department officials.

General Van Voorhis' inspection of France Field began at 10:00 a.m., May 16th, with a review by the officers to the music of the 13th Infantry Band of Fort William D. Davis. The Birdmen took on the air of a crack Infantry unit at its best. Immediately following the review, the combat crews took their places in front of their respective airplanes that were formed in a line on the airdrome. General Van Voorhis and staff proceeded to inspect the line of men and airplanes.

Major Connell, Commanding Officer of the 6th Bombardment Group, led nine B-18's in an aerial review that was an impressive sight. Perfect formation was flown by each ship and each element. Passing over France Field four times, and being in a different formation each time, the airplanes proceeded to land in the order of their position in the formation.

In honor of General Van Voorhis, a stag luncheon was served at the Officers' Club. All of the France Field officer personnel as well as the inspecting staff were present and enjoyed the delicious luncheon that was served.

General Van Voorhis stated to Lieut. Colonel Edwin J. House, Commanding Officer of France Field, that he was very well pleased with the inspection.

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Major Edward M. Powers, Air Corps, who held a temporary appointment as such received his permanent appointment, June 17

V-8499, A.C.

A NEW AVIATION CLUB ON THE WEST COAST

Headquarters for many activities of the Aviation Fraternity were established July 1st, when the Pacific Aviation Club, under the supervision of the Pilot's Land Corporation, moved into its permanent home at Santa Monica, on the Beach Front. The former "Grand Hotel," $1,250,000, eight-story club building is now the home of an organization made up exclusively of pilots, former pilots, private plane owners and men and women directly identified with aircraft production, airline operation and the development of its many phases.

This is the first organization of its type in the world and is being operated on a non-participating basis in that the members incur none of the debts or obligations of the club.

In addition to becoming the permanent residence of many Southern Californians and the temporary quarters of airmen from other parts of the country, the Pacific Aviation Club becomes the site of practically all social functions and meetings of the industry held in that territory. Complete facilities are available for large conventions, smaller gatherings, dances, bridge teas, luncheons, parties for the younger generation and the like.

The Club's new quarters include 136 private rooms with baths, five private dining rooms, approximately 3,000 individual lockers, complete physical conditioning departments, a wide range of recreational facilities and one of the largest fresh water pools in California. General rooms include colorful lounges, game rooms, cocktail bars and the banquet hall. The private beach extends 220 feet, with an esplanade and subterranean tunnel leading into the clubhouse itself. Here men and women alike in the aviation industry find a common meeting ground and a grand place to entertain in a place they can always call their own.

The Club boasts of officers and directors from the leading branches of the aviation industry. Lieut. Colonel Joseph L. Stromme, of the U.S. Air Corps Procurement Planning Division, is President and Director; Walter A. Hamilton, Chief of Materiel and Director of Douglas Aircraft Company, Club Vice President; Major Howe Thayer, Director of Industrial Relations of North American Aviation, Inc., Club Treasurer; G.H. "Jerry" McClelland, well known in aviation circles, Club Secretary. Other Directors include Carl B. Squier, Vice President in-charge-of Sales for Lockheed Aircraft Corporation; Jack Frye, President of T.W.A.; Orville A. Rogers, Los Angeles attorney and sportsman pilot; Richard Millar, President of Vultee Aircraft Company; and LaMotte T. Cohu, Chairman of the Board of Northrop Aviation Company and Director of T.W.A.

The Executive Committee reads like a veritable "Who's Who" in this fast growing industry.

The location of the Club makes it within easy reach of all airports and plane factories in the Los Angeles area. The beach climate and complete facilities of the Club will make it vacation headquarters for many families, permanent or temporary residents of Southern California.

Membership is open to those persons who are interested in the development of aviation and to those directly connected with the industry.

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PROGRESS ON "B" STAGE AT RANDOLPH FIELD

On June 11th, all training for the Class 40-E at Randolph Field, Texas, was completed, with no serious accidents during the course. A total of 212 students completed the course. "B" Stage personnel, therefore, had a holiday on June 12th and 13th. A new Instructors' School, with a class of approximately 100 students, was started on June 14th. This will necessitate the presence of all "B" Stage instructors during the in-between-class period, and only such leaves as may be classed as emergency will be granted. "It seems," says the News Letter Correspondent, "that quite a number of the young officers are getting married - which is definitely an emergency. We offer these young officers our congratulations."

The Instructors' School will be completed on June 28th, and on the following day the new class, 40-G, is scheduled to report to "B" Stage ready for work. It is not known as yet the exact number of students which will comprise this class.

A short Instructors' School was just concluded, and three Air Reserve officers completed the course, namely, 2nd Lieuts. I.O. Carlgreen, B.W. Foster and D.R. Conard.

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AIR CORPS TROOPS ARRIVE AT McCHORD FIELD

Monday, June 17th, saw the 17th Bombardment Group and the 89th Reconnaissance airplanes arrive from March Field, led by Colonel William H. Crom, Commanding Officer of the Group. The first extensive use of the new landing mat was made without mishap. Curious crowds were soon swarming over the field, and additional guards were stationed near the airplanes to safeguard government property. The B-17B airplanes returned to March Field, Calif., the following day with the personnel of the B-18A's, in order that they might move cars, families and household goods from sunny southern California to McChord Field, and complete the movement prior to June 30th.

The months of May and June saw McChord Field assume more the appearance of a military post and less that of a labor camp. Construction in general has advanced to a stage where order began to rise out of chaos and where the casual observer is able to form some idea of what he could eventually expect to see.

Although badly disappointed in not having the streets surfaced, McChord Field personnel are at least glad that all curbs are in and traffic lanes definitely set. But all of that doesn't reduce the daily diet of dust.

During the months of May and June, the following officer personnel reported:

From Barksdale Field, La.: Lieut. Col. Armin F. Herold, Base Operations Officer of the 6th Air Base, to become Base Adjutant, S-3, Public Relations Officer and Base Operations Officer of the 19th Air Base.

From Kelly Field, Texas: 1st Lieut. Paul L. Barton, to become Assistant Post Exchange Officer.

From Hamilton Field, Calif.: Captain Junius P. Smith, Medical Corps, to become Assistant Surgeon and Flight Surgeon.

From Hamilton Field, Calif.: 2nd Lt. William H. Cleveland, to become Acting Weather Officer and Squadron Supply Officer of the Base Headquarters and 19th Air Base Squadron.

Some recent additions of officer personnel assigned to the Base include the following: Captain Hansford W. Pennington, 1st Lieut. John A. Hilger, 2nd Lieuts. James C. Averill, Guilford R. Montgomery, Charles R. Greening, Raymond S. Morse, Air Corps; 2nd Lieuts. George A. Blakey, Elton L. McCune and Charles J. Langmack, Air Reserve.

Captain Clint L. Taylor, (F.A.) QMC, reported on June 15th to take up his duties as Assistant Post Quartermaster.

Headquarters of the Air Base was established in the barracks building, using the large day rooms on the ground floor front of the building. The entire barracks are completed and ready for occupancy. With one of the finest kitchens anywhere in the country and mess hall second to none, the comfort of the men in the barracks has been definitely assured. So well thought of are our own mess set-up and personnel, that a dinner arranged for 200 members of the Tacoma Young Men's Business League grew to an attendance of 515. To the Mess Officer, Major Morrison, and the Mess Sergeant, Tech. Sgt. Gordon Brackett, and the excellent kitchen staff must go credit for not becoming involved in an embarrassing situation.

The main runway is completed, as well as the Hangar 1 and 2 aprons. Except for some interior finish work, the hangars are completed.

With the arrival on June 5th of officers and men from Hamilton Field, and men from Gray Field, Fort Lewis, Wash., the 19th Air Base Squadron is now completely assembled and prepared to take over the operation of the post as fast as the various units are released by the Construction Quartermaster.

The present Base Staff consists of:

Colonel Carlyne H. Wash, Commanding Officer;

Lieut. Colonel Frank W. Wright, Executive Officer;

Lieut. Colonel Armin F. Herold, Adjutant, Asst. Executive and Operations Officer;

Major Thad V. Foster, Air Corps Supply Officer;

Major Raymond Morrison, Commanding Officer, Base Hqrs. and 19th Air Base Squadron;

Major Harold Guernsey, QMC, Post Quartermaster;

Captain Theodore M. Bolen, Engineering Officer;

Lieut. Colonel Wood S. Woolford, Medical Corps, Post Surgeon;

Captain Junius P. Smith, Medical Corps, Assistant Surgeon and Flight Surgeon;

First Lieut. Arthur R. Cyr, Ordnance Department, Ordnance Officer;

First Lieut. John A. Hilger, Police and Prison Officer and Provost Marshall.

First Lieut. Paul L. Barton, Assistant Post Exchange Officer;

Second Lieut. Charles R. Greening, Assistant Public Relations Officer and Assistant Police and Prison Officer.

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Air Corps officers who received temporary appointments in the grades indicated were Lieut. Col. Donald P. Muse to Colonel; Majors Leo F. Post and John C. Kennedy to Lieut. Colonel, with rank from June 17, 23 and 25, respectively.

SECOND LIEUTENANTS AS TEST PILOTS
By the Materiel Division Correspondent

In looking over the most recent Wright Field officers' directory, "old" days at McCook Field were recalled. The appearance of the names of seven second lieutenants assigned to the Flying Branch as test pilots formed the bridge, in this instance, across the chasm of time. For some years at Wright Field, the second lieutenant has been an almost unknown phenomenon, the work of the Materiel Division, generally speaking, requiring more seasoned experience along technical lines. Even the list of first lieutenants has been overbalanced numerically by the list of captains to whom most of the important work of flight testing was entrusted.

Old files and photographs of groups of McCook Field test pilots have just been reviewed for comparison. In those days following the World War, when the Air Corps was very young, indeed, lieutenants and civilians carried on this important work exclusively. It was only later after the transfer of the Materiel Division to Wright Field that an officer of the grade of captain was the official in charge of the group. In more recent years, the responsibility has been placed with an officer having the grade of major, Major Stanley M. Umstead, who delights in flight testing the biggest airplanes personally, being the present Chief of the Flying Branch.

One of the old photographs resurrected showed the following illustrious group. It bears no date, but memory places it somewhere about 1920. Reading from left to right are assembled: Lieut. Harold R. Wells, at present Major, stationed at Selfridge Field; Lieut. Harry A. Johnson, at present Major, located at Chanute Field; Lieut. Eugene Batten, who died at Walter Reed Hospital, September 12, 1931, and whose many friends and brother officers will remember as a gay and charming companion; Ralph Lockwood, civilian, who, when last heard from, was employed by one of the major oil companies; Lieut. Harold R. Harris, former chief of the test pilots, who now holds an executive position with Pan American-Grace Airways; Louis Meister, civilian test pilot, Air Corps lieutenant during the World War, killed in testing a training plane for a commercial company after he had severed his connection with McCook Field; Lieut. Alexander Pearson, killed while testing the Verville Racer in 1924; Lieut. Eugene H. Barksdale, killed while flight testing a new Observation airplane in 1926; Lieut. Wendell H. Brookley, killed at Bolling Field in an airplane crash in 1934; Lieut. "Jimmy" Doolittle, at present holding an executive position with the Shell Oil Company; and Lieut. John A. Macready, at present in civilian life in California.

Another photograph of a little later vintage has many of those named above, together with the following additional ones: Lieut. James T. Hutchison (Hutch), at present Major, Wheeler Field; Lieut. R.C. Moffat, at present Major, Langley Field; Lieut. George Tourtellot, at present Major, Command and General Staff School; and Lieut. William N. Amis (Pinkie), at present Major, Barksdale Field.

These lieutenants and civilians, although in the prime of their youth, had had as a result of concentrated World War training virtually all the flying experience to be had in their day, and were well qualified for the very complicated task of flight testing new and untried airplanes. That was the day, it will be remembered, when airplanes were shipped into McCook Field knocked down, then carefully assembled, and test-hopped back and forth across the field in order that the pilot might get thoroughly the feel of the controls and also the feel as to whether the airplane could be trusted to higher flight. Wires were stretched plentifully between the wings; struts and supports were more numerous than table legs in a modern living room. Especially when new, those "crates" took "flying."

The ability of the lieutenants of 1919-1920 is in no way intended to give the impression that their successors at present in the Flying Branch are any the less experienced. They are Army trained, and several of them have given up positions flying the air lines, in which they have had thousands of hours, in order to come into the Air Corps on permanent commissioned status. From their expressions, they seem to be enjoying their new work as thoroughly as their associates enjoy having them in it.

Although the number of first and second lieutenants has lengthened the officers' directory considerably at Wright Field, the list of higher ranking officers is even longer. Compared with the little old McCook Field directory, the present affair is a distinct

(Continued on Page 11)

RESERVE OFFICERS RECEIVE REGULAR COMMISSIONS

As the result of an examination held in April, 1940, to fill vacancies authorized in the Appropriation Act for the Fiscal Year 1941, 69 Air Reserve officers were selected for appointment as second lieutenants in the Air Corps, Regular Army, effective July 1, 1940.

The War Department announced that 441 Reserve officers took the examination and that, in addition to the 69 to be commissioned, 212 others qualified, but there are no vacancies at this time. Of the remainder, 147 failed the mental examinations, 6 failed in the physical tests, 2 were over age for Regular Army commissions, 3 were killed, one withdrew, and one was restricted to co-pilot duty.

Unfortunately, one of the 69 Reserve officers selected for permanent appointment, 2nd Lieut. Richard M. Bylander, Air Reserve, was killed in an airplane accident at Jamaica, New York, on June 17, 1940. His home was in Little Rock, Ark.

The 68 Reserve officers to be commissioned second lieutenants in the Regular Army Air Corps on July 1, 1940, are listed below, as follows:

Breckenridge, John Preston	Paragould, Ark.
Hebert, Alvin Edward	Los Angeles, Calif.
Page, Jerry Dentler	Los Angeles, Calif.
Wagner, Walter John	Manzanola, Colo.
Manierre, Ernest Roderic	Hartford, Conn.
Pratt, Ogden Nelson	Hartford, Conn.
Hanes, Horace Albert	Armington, Ill.
Dixon, Elmer Austin	Champaign, Ill.
Boyd, William Ellsworth	Chicago, Ill.
Sullivan, Frank Edward	Chicago, Ill.
Kuhl, Philip John	Galesburg, Ill.
Graves, Frank Norton	LaGrange, Ill.
Feallock, Wm. John, 2d	Michigan City, Ind.
Morgan, MacPherson	Urbana, Ill.
Clark, Donald Leonard	Alta, Iowa
Evanoff, Alexander George	Belle Plain, Iowa
Zoeckler, John Lewis	Davenport, Iowa
Myers, Edward Payson	Iowa City, Iowa
Leffingwell, Charles Edwin	Oxford Jct., Iowa
Crow, Roger McKee	Topeka, Kans.
Wright, Adolf Milton	Louisville, Ky.
Champagne, Wilbur Anthony	Lafayette, La.
Paul, Joseph Herbert	Marriottsville, Md.
Moore, Alvan Neavitt	Queen Anne, Md.
Adams, Wm. Carrolton	Detroit, Mich.
Rehmann, Orville Herman	Bertha, Minn.
McNeese, George Miles	Bassfield, Miss.
Romberg, Edgar Allen	Lincoln, Neb.
DeVine, John Irvin, Jr.	Atlantic City, N.J.
Walter, Carl Paul	Fanwood, N.J.
Gorman, Paul Joseph	Buffalo, N.Y.
Bennink, Donald Thomas	Chautauqua, N.Y.
Heber, Malcolm M.	White Plains, N.Y.
Vosper, Stanley Richard	Akron, Ohio
Fawcett, Ralph Monroe	Ottawa, Ohio
Jackson, J. Garrett	Altus, Okla.
Schurter, Orie Olin	Burlington, Okla.
Anthis, Rollen Henry	El Reno, Okla.
Burhus, John Leonard	Eufaula, Okla.
Hubbard, Edward Francis	Frederick, Okla.
Porter, Stuart Moss	Muskogee, Okla.
Bennett, Donald K.	Corvallis, Ore.
Baseler, Robert Lee	Ardmore, Pa.
Ambrose, Joseph Richard	Danville, Pa.
Newton, Dorr Ellsworth, Jr.	Malvern, Pa.
Filer, William Alfred	Mather, Pa.
Reynolds, John Norton, Jr.	Philadelphia, Pa.
Reeve, Ralph Amos	Milbank, S.D.
Hendric, Wm. Murray	Cookeville, Tenn.
Smelder, Harold Caldwell	Nashville, Tenn.
Looke, Cecil James, Jr.	Austin, Texas
Gayle, Charles Afton	Bellaire, Texas
Winningham, Rollin Murray	Edinburg, Texas
James, Weldon Marion	Fort Worth, Texas
McEntire, William Elza	Fort Worth, Texas
Harper, Carl	Lubbock, Texas
Glober, George Edward	San Angelo, Texas
Schriever, Gerhard John	San Antonio, Texas
Hubbard, Wm. Edward, 2d	Sweetwater, Texas
Sanders, Richard Condie	Salt Lake City, Utah
Jeffrey, Thomas Stanley, Jr.	Arvonia, Va.
Harris, Robert Fleming	Roanoke, Va.
McElroy, Stephen Davenport	Upperville, Va.
Martin, Maurice Leslie	Vancouver, Wash.
Murrell, Carroll Thurman	Barrackville, W.Va.
Cunningham, Joseph Austin	Clarksburg, W.Va.
Richardson, John Luverne	Eau Claire, Wisc.
Wood, Frank Lee, Jr.	Laramie, Wyo.
Ford, Thomas Robert	Shelby, Mich.

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MOFFETT FIELD TRAINING CENTER

Official confirmation of the War Department announcement that Moffett Field, Calif., would become the "West Coast West Point of the Air" was recently received at that station, and indications were that classes will be under way there by October of this year.

Basic and advanced training will be given at Moffett Field as at Randolph and Kelly Fields and at the other new training center, Maxwell Field, Ala. Flying Cadets will be given the course of ten weeks' primary instruction at civilian schools before they are turned over for more advanced work at the Air Corps schools. Ten weeks of basic, ten weeks of advanced work and five weeks of specialized training will constitute the training directive at Moffett Field. By November, when all three fields are operating, it is planned to have nearly 1300 students entering training every five weeks.

A total of 1,000 flying instructors in advanced training will be needed to keep the new program rolling, and the number of instructors in the other stages of the training will be increased proportionately.

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ALBROOK FIELD COMMANDER FLIES TO WASHINGTON

Colonel A.H. Gilkeson, Commanding Officer of Albrook Field, Panama Canal Zone, visited the nation's capital during May on official business. First Lieut. J.B. Buck, of the 15th Air Base Squadron, was co-pilot, and passengers in the B-18 airplane were Frank H. Wang, Executive Secretary of the Panama Canal, and Major Burritt H. Hinman, of the Judge Advocate's Office, Panama Canal Department. Enroute to Washington, stops were made at Guatemala City, Brownsville, San Antonio and Maxwell Field.

TESTING OF PHOTOGRAPHIC LENSES AND SHUTTERS AT THE MATERIEL DIVISION

By the Materiel Division Correspondent

It is difficult to realize when we see some of the very beautiful aerial photographs produced by the photographic units of the Air Corps that the effects obtained are possible only because of the vast amount of technical work which is eternally in progress at the Materiel Division laboratories in connection with equipment responsible for producing these photographs. One of these groups of the Photographic Laboratory which is responsible for the tests and experiments of suitable lenses and shutters for aerial cameras is known as the Optics and Sensitometric Unit. For the benefit of the hundreds of Air Corps personnel interested in both aerial and ground photography, not only from the professional but from the amateur viewpoint, this unit has prepared the following descriptions of its methods of testing lenses and shutters.

Camera Lenses

The equipment used in lens testing consists of a precision metal camera, especially designed for the work, an optical bench, and an 84-inch collimator with suitable targets for determining the resolving power of the lenses.

All aerial camera lenses are tested under lighting conditions which simulate very closely those encountered in taking photographs from the air. In all the tests, the rays of light which fall upon the lens from each point of the target in the collimator are parallel, which condition exists in aerial camera operation. In taking an aerial photograph, each point on the object, which has a corresponding point in the negative image, sends a cone of light rays through the free aperture of the lens. Since the object points are at a great distance from the lens, all the rays from a given point are practically parallel, a condition which does not exist when the object being photographed is very close to the camera, as in taking a portrait.

The collimator used is a Bausch and Lomb doublet telescope objective of 84-inch focal length. This lens is mounted in a rigid metal tube having, in place of the eyepiece ordinarily used on a telescope, a target. This target consists of patterns of line, different distances apart. Parallel rays coming out of the collimator from each point on the target fall on the lens being tested. An image of the target is produced in the focal plane of the test lens and this falls on a plate coated with a sensitive panchromatic emulsion. Panchromatic emulsion is used because this permits a check on the quality of the lens with regard to spreading of the different colors of light into a spectrum, a defect known as a chromatic aberration.

The precision metal camera used in making the test plates is pivoted about a point directly under the lens. This permits turning of the camera so that the images from the test target fall at different locations on the test plate. The final test plate then has a series of images which represent images extending from the center of the negative all the way out to one corner. Exposures are carefully measured and the plates developed under fixed conditions in order to establish a constant density for all images.

When the test plates are developed and examined, the coarse lines in each target image usually show up with proper spaces between them. Then, looking at finer and finer lines, a place will be reached where the lines fail to be resolved. There are no spaces between them, and they appear to run together. This marks the "limit of resolving power" of the lens.

In making such a test, it is essential to be on guard against the phenomenon known as "spurious resolution." This is best explained by an example: It may be found that a lens will photograph a pattern of 15 lines per millimeter, and also a pattern of 30 lines per millimeter, but fails to show up as separate and distinct lines an intermediate pattern having 25 lines per millimeter. This is known as "spurious" or false resolution and is the result of interference effects.

It is from the lens test plates that the most valuable practical information is obtained. The resolving power of the lens, or its ability to show up very fine structural detail is the most important thing to be considered in choosing a lens for use in military photography. The different aberrations of the lens, such as chromatic aberration, curvature of field, spherical aberration, departure from sine condition, etc., are the things which cause a lens to have inferior resolving power.

While it is possible to measure all of these aberrations on an optical bench and plot the results of graphs and curves, it is very difficult to interpret the meaning of these data in terms of what the lens will do toward resolving fine structured detail. The results of the test plates integrate all these aberrations, and tell just what the net result is after the designer has properly balanced the residual aberrations in the design.

By the use of a filter between the lamp placed at the end of the collimator and the target in the collimator, it is possible to determine the results given by the lens for the different filters used in aerial photography. For example, if a minus blue filter is used between lamp and target, a test plate made, the filter then placed in position in front of the lens being tested, and another test plate made, a comparison of these two test plates will show the effects of any flaws present in the filter.

The optical bench mentioned above is used principally for measuring equivalent focal lengths and the distortion of lenses intended for use in topographic mapping. For this purpose, the collimator may be moved along parallel ways so that it is in front either of the optical bench or the lens test camera. The optical bench is of the type known as a nodal slide bench. By means of the nodal slide method, lens distortion is measured. A sodium laboratory arc is used to illuminate the line test target used in the collimator when measuring distortion on the optical bench. The bench in use at the Materiel Division is approximately two meters in length, which is sufficiently adequate for all except the longest telephoto lenses. It is equipped with a Hilger measuring microscope, which measures to .01 mm.

Shutters

In aerial photography the shutters are as important as the lenses. The characteristics of a high-class shutter for aerial work are high speed, high efficiency, reliability, and long life. The two principal shutters used by the Air Corps are the focal plane and the between-the-lens types.

Focal plane shutters have the advantage of producing extremely high speeds and are very efficient. The main disadvantage is the effect known as "focal plane shutter distortion." For this reason, focal plane shutters are seldom used when it is desired to make photographs for accurate topographic mapping. They are used, however, in reconnaissance and spotting photography.

For accurate, precise mapping, the between-the-lens shutter is employed. These shutters produce no distortion as does the focal plane shutter. Their principal disadvantages are inefficiency and the inability to operate at extremely high speeds, although some improvement has been accomplished in the latter direction during recent years.

The shutter tester in use at the Materiel Division consists essentially of a source of light, a rotating drum around the periphery of which are 60 plane mirrors, an iris diaphragm holder for the shutter, and an enclosed rotating disc which holds film or bromide paper on which is recorded, in a series of high-speed motion picture silhouettes, the record of the opening and closing of the shutter. Knowing the speed of rotation of the mirrors, that is the number of flashes of light per second, it is possible to determine from the shutter test record the duration of the cycle of operation of the shutter. This record also permits the determination of the efficiency of the shutter, which is the ratio of the amount of light that gets through the shutter to what would get through if the shutter operated to full opening instantaneously, stayed open for the entire cycle of operation, and then closed instantaneously. The rotating mirror type of shutter tester is modeled after the design of Nutting, formerly of the National Bureau of Standards.

In addition to the rotating mirror tester, the Materiel Division also uses what is called an equivalent exposure timer. This shutter tester permits a pulse of light passing through the shutter to fall on a photoelectric cell. The current generated controls the charging of a condenser. The charge on this condenser is counterbalanced by rotating a dial calibrated to read directly in thousandths of a second. An approximate measure of efficiency of the shutter can be obtained on this instrument by measuring the equivalent exposure time when the shutter is stopped down, and comparing this with the equivalent exposure time when the shutter is full open.

As the speed of military aircraft constantly advances in keeping with the modern trend, the speed of shutters used on aerial cameras must be increased in order to prevent undue image movement on the film during exposure. Aerial shutters having exposures as long as 1/30th second have been used and are still used for special purposes. A speed of 1/300th is more desirable for average aerial photography. However, because of decreasing shutter efficiency at high speeds, it is not believed that a between-lens shutter faster than 1/500th second is practical, unless some radically new principle of design is discovered.

With the increasing improvements of high speed, between-the-lens shutters, consideration is being given to the design and fabrication of a shutter tester which will more adequately measure their characteristics. The present types of instruments were designed to measure shutters, the speeds of which did not exceed 1/250th of a second. A

shutter now being fabricated for experimental use by the Air Corps will have an equivalent speed of approximately 1/500th of a second. This will necessitate the use of another type of tester to obtain an accurate measurement of its characteristics.

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GRADUATIONS FROM A.C. TECHNICAL SCHOOL

On June 14, 1940, a total of 74 students graduated from the Chanute Field branch of the Air Corps Technical School. Of this number of graduates, three pursued the course for Electrical Specialists, six the Teletype Maintenance course and the remainder the course for Radio Repairers and Operators. The Air Corps stations from which these men were assigned to the Technical School are indicated below, viz:

Radio Repairers and Operators

Selfridge Field: Pvts. 1st Class Henry J. Iglelski and Edwin H. Shovar.
Bolling Field: Sgt. Charles I.Chambers, Pvts. 1st Class David H. Blakely, Floyd E. Cross, Garrison L. Darby, John Paulick; Pvts. Gaston M. Fox, Bruce C. Keefer, Thomas F. Mannion and Clair L. Wadding.
Kelly Field: Sgt. Glidwell R.Glammer, Pvts. Langhorne S. Gee, Floyd P.Foss.
Moffett Field: Sgt. James H. Thorne
Langley Field: Cpl. Paul L. Stair, Pvts. Charles K. Betting, John E. Mohlar, Julius J. Flaska, John L. Hoffman, Eugene O. Holden, Melvin F. Ingold, Charles A. Laurer, Alois M. Palenchar, John Pavlinko and Vincent W. Stefanic.
Hamilton Field: Pvts. 1st Cl. Emery V. Barrus, Oscar B. Haugen and James A. Schott.
Fort Riley: Pvt. 1st Cl. Lawrence R. Fulk and Pvt. Earl B. Loyd.
Fort Sill: Pvt. Weldon V. Bell.
Chanute Field: Pvt. Richard A. North.
March Field: Pvts. 1st Cl. Nicholas H. Kahlefent, John W. Moore, Pvts. Arvid E. Dahlberg, Jack W. Douglas, Donald K. Hassig, Jesse H. Hennington,Norman L. Johnson, Woodrow T. Palmer, Lewis B. Scott, Robert B. Walsh, Louis A. Weber and Frank A. Winstead.
Barksdale Field: Pvts. Joseph A.Gaudet, Roy H. McPeters, Raby W. Padgett, Robert D. Poole, Warren S. Quin,Eugene L. Routier and Thomas P. Tison.
Randolph Field: Pvts. Buford C. Hall, Clyde C. Lockwood, Leo C. Purcell and Haywood V. Young.
Mitchel Field: Pvts. John P. Mack, Dale L. Parfitt and Bruce L. Willet.
Lowry Field: Pvts. Raymond A. Ohm and Raymond P. Slatter.
Philippine Army Air Corps: Pvt. Hubert E. Peacock.

Electrical Specialists

Brooks Field: Pvt. Charles Maravec.
March Field: Cpl. Lester M. Brady.
Barksdale Field: Pvt. 1st Cl. Edmund J. Kolonka.

Teletype Maintenance

Maxwell Field: Sgt. Harry M. Forehand and Cpl. James T. Boswell.
Lowry Field: Cpl. Thomas J. Higgins,Jr.
Mitchel Field: Cpl. Michael A. Miullo.
Barksdale Field: Cpl. Hollis W. Truesdale.
Moffett Field: Pvt. Clarence W. Grubbs.

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Second Lieutenants as Test Pilots

(Continued from Page)

indication of the years of gradual and more sudden recent expansion. The elongation will no doubt continue in the immediate future, for the place of air power in the military scheme is being more completely recognized each day. Looking back to our small groups and small, intimate fields may provide a certain nostalgic satisfaction, but it also brings the realization that the Air Corps is facing a present and a future of tremendous changes, which may be symbolically expressed by the military command, "Forward March!"

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ACTIVATION OF 5TH SIGNAL PLATOON

Under the command of the Post Signal Officer, Captain Frank Curtiss, the 5th Signal Platoon Air Base was activated at Hamilton Field, Calif., as of June 1, 1940.

The organization calls for one first lieutenant, two Sergeants, three Corporals and nineteen Privates, 1st Class, and Privates. To date, 17 men reported for duty, including Sergeant Kinzey, and Private; 1st Class, Wicher and Private Windovel, who are graduates of the Signal School at Fort Monmouth, N.J. These men have entered into intensive recruit training and will be ready for duty early in July.

This unit, which is termed an Aviation Base Platoon, will work in conjunction with the regular Air Corps squadrons in their various activities at Hamilton Field and on maneuvers.

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Major James H. Doolittle, Air Reserve, an outstanding figure in aviation circles, was assigned to active duty for one year from July 1, 1940, at Indianapolis, Ind., as Assistant District Supervisor, Central A.C.Procurement Dist.

FUNERAL OF GENERAL ROBINS

The funeral of the late Brigadier General Augustine W. Robins, who was in command of the Air Corps Training Center, was held at the Arlington National Cemetery on the afternoon of Thursday, June 20, 1940. The honorary pallbearers were his classmates of the U.S. Military Academy.

General Robins died suddenly at his quarters at Randolph Field on Sunday, June 16th. Just a few hours before his death he had attended a dance given by a Flying Cadet battalion, and he appeared to be in good health.

Funeral services were held in the Randolph Field Post Chapel on June 17th. Pallbearers at the Randolph Field services were Colonels John B. Brooks, Commanding Officer of Randolph Field; Edwin B. Lyon, Assistant Commandant, Randolph Field; Henry J.F. Miller, Commanding Officer of Duncan Field; Lieut. Colonels Thomas W.Hastey, Executive Officer of the Air Corps Training Center; Walter H. Reid, of Randolph Field, and Fabian L. Pratt, Medical Corps, Commanding Officer of the School of Aviation Medicine, Randolph Field.

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"WINGS OVER AMERICA" RADIO BROADCAST

According to the News Letter Correspondent from Hamilton Field, Calif., Lieut. Arthur V. Jones, Public Relations Officer conducting the radio program "Wings Over America," was scheduled to broadcast from the Air Corps Exhibit at the Golden Gate Exposition on Treasure Island on June 27th, and that this program, the seventh of the series, promised to be very interesting. Lieut. Jones was to be assisted by Lieut. W.R. Stark, who is in charge of the Hamilton Field detachment stationed at Treasure Island for the duration of the Fair. Lieut. Stark reports that great interest is evidenced by the Fair visitors in the B-17B "Flying Fortress" which is on display, also in an aerial mosaic of the San Francisco Bay area, flown and laid by the 88th Reconnaissance Squadron of Hamilton Field.

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FLAG RAISING ON MacDILL FIELD

The Squadrons of the 29th Bombardment Group, GHQ Air Force, were on Sunday, June 16th, called upon for the first flag raising on MacDill Field, Tampa, Fla. Many citizens of Tampa, having never witnessed a flag raising, visited the field for the first time to be present on this occasion. From 5,000 to 7,000 persons attended the exercises.

Interesting speeches were delivered by the Base Commanding Officer, Colonel Clarence L. Tinker; Governor Holland, of Florida, and Ex-Governor Carlton. The public listened with interest, despite the terrific heat to which they were exposed.

An exhibition, given by the "Elks" of Tampa, constituted a history of all previous United States flags and leading up to the present day flag that have been flown in the United States. The entire show was in charge of the "Elks," and they performed a splendid job of presenting the first flag to MacDill Field.

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SUMMER SCHOOL AT HAMILTON FIELD

The school for Hamilton Field enlisted men, conducted by various public school authorities of the State of California, Division of Adult Education, Bureau of Trade and Industrial Education, Marin Junior College, and University of California, offered its summer session at Hamilton Field on June 17th.

Contrary to all expectations that soldiers would not want to attend classes during the summer months, the enrollment was over two hundred.

Classes being offered include Military Correspondence, Navigation, English, History, Civics, and courses in Mathematics from arithmetic to calculus.

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PERFECT PROOF

The tense atmosphere that prevails in the Administration Building at Randolph Field, Texas, with everyone working at top speed to keep pace with the swift moving events of the accelerated expansion program, was shattered the other day by loud and prolonged gales of laughter from the Secretary's office.

Investigation revealed that an applicant was unable to furnish the required birth certificate with his application for appointment as a Flying Cadet. However, he had the presence of mind to submit a duly notarized affidavit attesting to the correct date of his birth. It read as follows: "I certify that I was present at the birth of John Doe, June 17, 1918, at Hometown, Texas."

It was signed by his mother.

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First Lieut. Elvin F. Maughan, Air Corps, was promoted to Captain, with rank from June 18, 1940.

THE NEW AIR CORPS WIND TUNNEL AT WRIGHT FIELD
By the Materiel Division Correspondent

The largest high-speed wind tunnel in the world is being constructed for the U.S. Army Air Corps at Wright Field. Its test chamber section, according to specifications prepared by the Air Corps, will be 20 feet in diameter with a maximum air speed of 400 miles per hour.

Materiel Division engineers will be able to test units and assemblies under conditions closely paralleling the air forces encountered in flights at high speeds, as the new wind tunnel will be large enough to take full-size fuselages, cowls, canopies, nacelles, and propellers. When new and untried arrangements of military airplanes are suggested, their worth can be determined in advance and included in the type specifications for procurement purposes. Also, by using larger models of military airplanes, exterior parts can be reproduced with greater accuracy and in greater detail so that Materiel Division engineers when able to use models up to 15 feet in width in the new wind tunnel will get fuller data in tests than can be obtained in the 5-foot tunnel now used and which accommodates models no larger than four feet in width.

Complete plans call for a wind tunnel tube, circular in cross-section, extending around the four sides of a rectangle to form a circuit one-seventh of a mile; a test chamber building built around the tube on one of the long sides of the rectangle; and an adjacent power building which will house the largest electric motor ever used to power a wind tunnel.

Weighing 249,000 pounds and developing 40,000 horsepower, this motor will drive two 40-foot wind tunnel fans in tandem. The drive shaft alone will weigh approximately 66 tons. Auxiliary motors and generators which reclaim and feed back power to the main motor are interesting power installation features which cannot be described briefly. The contract for construction of the big motor was recently awarded to Westinghouse after a bidding competition.

In the testing chamber, a system of remote control will permit changing positions of the model while it is suspended in the air stream. Forces on the model, and pressures and air speeds of the wind stream will be automatically and remotely recorded in an air-conditioned control room which will be sealed off from the test chamber proper with sound-proof walls.

The test chamber will provide for both open and closed throat testing, with an overhead, six-component balance for model airplane tests, and a floor-type balance for full scale tests of fuselages, engines, nacelle-propeller combinations and the like.

When completed, the new Air Corps wind tunnel will be used primarily for applied research, i.e., the practical application of proved theories to specific military aircraft, leaving basic aeronautical research to other agencies.

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NEW TRAINER AT RANDOLPH FIELD

The present class of Flying Cadets at Randolph Field, Texas, will be the first to train entirely on the new BT-14 Training plane. Previously, all classes trained in part or wholly on the BT-9 type of plane. Although the two different types of training planes are made by the same manufacturer and are essentially the same, there are slight differences in the stall characteristics due to a change from a tapered wing section on the BT-9 to a warped wing section on the BT-14; the aileron controls are balanced on the BT-14 and the landing characteristics are changed slightly, because the BT-14 is more efficiently streamlined than the BT-9, and yet has less flap control than the BT-9. In a stall the BT-14 is not so easily controlled by the rudder as was the BT-9. The balanced aileron control probably will require the student to rely more on the "feel" of the ship and less on the "feel" of the controls in his flying, and a "flatter" angle of glide of the BT-14 will require a student to be a little more accurate in his landings. These slight changes in the characteristics of the training planes will require very little change in technique of teaching - the chief change will be one of judgment and accuracy - so that no delay will be necessary to prepare instructors to use the new plane; yet instruction should be speeded and made more nearly standard because the new planes will require less maintenance than the old ones, will be more uniform in slight variations from plane to plane, and no longer will there be any delay or confusion because of mixed types of planes in the same flight.

The 53rd School Squadron is the only Squadron at Randolph Field to be equipped 100% with the BT-14's, the first of which arrived in February of this year.

A FLYING STUDENT'S NIGHT NAVIGATION FLIGHT

By Flying Cadet William M. Bowden,
Class 40-C, Air Corps Advanced Flying School

Student training at the Air Corps Advanced Flying School, located at Kelly Field, Texas, is divided into several distinct phases - which may be classified as follows: a transition period, formation flying, beam and instrument work, and cross-countries. It might be added that the latter group can also be subdivided into three classes, namely: day, night, and time and distance problems.

Now inasmuch as I have had, at this point, a few more hours and considerably more "experience" in night work (flying) than have any of my fellow students, I have been honored with the request to publish a short treatise on just what to do and how to arrive at my destination on a simple little problem such as a night flight from Kelly to Pawnee to San Marcos and back to Kelly again. The idea of the problem is to take off from Kelly, fly over the several points as mapped out in the flight plan, and return to Kelly without unnecessary side trips (such as a jaunt to Austin, say). It might be added, too, that it is particularly helpful to fly only for the allotted time as allowable by winds aloft and a rather meager supply of 100 octane fuel.

But I digress. The best way out seems to be a little personal excursion on the above mentioned route, with a couple of side trips, so here goes.

"Let's see now....Pawnee 151 degrees, a minus-four wind factor, making it 147, and a minus-ten variation...that's 137; then, of course, if I find any more wind drift I can always correct it by lining up with the light lines. This is going to be a cinch. I kinda wish now that I had called that blonde I met last night and have her meet me when I get in.

"From Pawnee I'll fly about 360 and catch Falls City, Stockdale, Seguin, and the highway; and coming back it'll be a breeze along the light line to San Antonio, so there's not much sense to even bother about figuring a course."

Thus plans were made for the expected "cinch" night cross country on the triangular course from Kelly to Pawnee to San Marcos and back to Kelly again.

Take-off time was on the flight board as H plus 1:13, putting me in the air at 8:13, and, if all went well, back home again at 9:15, or thereabouts. So with light heart I got out my headset, goggles and parachute, stuffed my ears with cotton and sauntered out to good old 124, with nothing but thoughts of the fun and thrill of flying on my mind.

At 8:08 I started the motor, checked my lights, switches, and the mags, and at 8:10 released the brakes to taxi out to the runway for the take-off. So far, so good. I was on time on the ground at least, and at exactly 8:13 by the clock in the control tower I gave her the gun.

The take-off wasn't bad considering the fact that I couldn't see very well in the dark and had to pull one of my wings up to get over the portable flood lights on the far end of the ramp. Back came the throttle and prop pitch, and away I went into the night. Making a wide circle, I gained my altitude over the field and was ready to begin the problem at hand.

Lights of San Antonio were plainly visible and I caught the double beacon of Brooks and the single beacon of Stinson on my left. Off to the south a couple of pin points made periodical flashes, so I settled back and headed out.

"Oh, what a breeze," I thought. These lights down there must be on the south end of the lake, and that cluster must be Losoya. I think I'll ease over to get on the light line so I can read the flashing code beacon on the rear of the lights."

With this on my mind I began easing over and when I got to the "H" light I could see the Pawnee beacon with its green flashing code only two lights away. Checking the compass, I found that I had to maintain a course of approximately 130 degrees to keep a heading toward Pawnee. The wind was a little stronger than I had expected.

Finally, I reached a point over Pawnee where I could see the green dotted outline of the landing field, so I circled once to the left and headed out from a spot directly over the center of the field.

Things had gone pretty smoothly, in fact too smoothly, thus far, but it was just the calm before the storm, and it wasn't long before I realized that all good things must end. First, it seemed that heading away from the lights it was much darker, and the towns that were supposed to be sprawled along the railroad were not materializing as rapidly as they should have. Soon, some foreign bug in my brain reminded me that the wind had drifted me on the way down the light line and even now must be drifting me off my course.

"That town below me can't be Falls

City, it must be Floresville. At that rate I'll end up at Randolph and that won't do, so I'll just ease over a few degrees on my course and pick up Stockdale and Seguin." So, mumbling to myself, I edged over and headed still deeper into the dark night before me. The ride was getting a little monotonous by this time, so I decided to catch a little music on the radio compass and twisted the dial and picked up the Chesterfield program with Glenn Miller's currently popular swing band rendering the jove.

"This is the life," thought I to myself, and continued on my merry way. The only trouble was that with everything going so smoothly I had too much time to worry about my next check point. And on top of other things a haze was coming out of nowhere and lights were growing dimmer. A light line sprang out of the dusk and in momentary bewilderment didn't know just what to think, but then realized that a new beam had been stuck between San Antonio and Houston and, to my credit, figured that this was the light line to go with it.

It was at this point that I found, upon checking the gas supply, that my wheels were still down, but this fact didn't bother me half so much as did the discovery, after changing my radio, that the lights of some city on the ground had suddenly and for no reason at all jumped up over my right shoulder. I was plenty startled at this point, but after checking the needle and ball discovered that I was in a steep spiral to the right and heading due east, just about 90 degrees off course.

Upon getting straightened out, I saw Seguin on the ground below me, so figured my course was just about right. Another ten minutes passed and I saw Seguin again, this time a little to my right, so I eased over to get back on course. It wasn't until the fourth time I saw Seguin that I realized I didn't know just where I was or what I was doing there.

Needless to say, I began to worry a little now and, to make matters worse, Bob Burns was just telling Bing Crosby of a couple of parachute jumps some of his illustrious relatives had made. This didn't exactly sit so well with me, so I snapped the radio off in disgust, dismay, disillusionment, or what have you. I failed to mention that my clock had stopped about the time Major Bowes went off the air and Glenn Miller came on, so you can see that the time situation was well in hand, however acute the gas problem.

I knew I'd been flying for quite a while, so decided to head for the nearest light and to the devil with San Marcos. My gas was getting low and I'd best start for Kelly. Heading due west, I caught a light line but, instead of leading west as it should have done, it started south, and I do mean due south. By this time I was in a complete daze and, according to the flashing code beacons off the San Antonio map, probably some place near Dallas, Houston, Corpus or El Paso. Boy, would I get a riding when I got home!

The rest of the story is history. I made a passable landing at Austin, about which there have been many tales told in and around the barracks, refueled one tank, and came on home just in time to beat the midnite curfew to the draw.

The moral is, as Cloudy Joe and I did not know, your instruments are there for a pretty good purpose, so believe in them and keep your head out in the breeze enough of the time to get an occasional glimpse of them.

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SHELTERS FOR FIRE TRUCKS AT RANDOLPH

Under date of May 14th, the Quartermaster General advised that funds in the amount of $3,873.20 were being allotted to Randolph Field, Texas, for the construction of two pipe frame vehicle shelters, one to be located on each side of the field along the hangar lines. These shelters will provide protection from the elements for the crash fire trucks which are stationed along the Hangar Line during the periods of flying.

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FLIGHT FROM PUERTO RICO TO THE STATES

On June 1st, Colonel Follett Bradley, pilot; Captain George W. McGregor, co-pilot; Cpl. Thompson, crew chief; Sgt. Lentz, radio operator, and seven passengers departed from Borinquen Field, Puerto Rico, on a trip to the "States." Stops were scheduled to be made at Miami; Langley and Bolling Fields; West Point, N.Y.; Mitchel Field; Boston; Dayton; Selfridge Field; Denver, Sacramento; March Field; San Antonio; Maxwell Field, and return to Puerto Rico, via Miami, Fla.

It was estimated that the elapsed time for this long aerial journey would be approximately 17 days.

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Captain David P. Laubach, Air Corps, recently transferred from Mitchel Field, N.Y., to Langley Field, Va., is completing a textbook on Navigation which will be used in the Air Corps for navigation schools.

NEW OFFICERS FOR REGULAR ARMY AIR CORPS

Announcement was made in Special Orders of the War Department, recently issued, of the transfer of 99 officers of various branches of the Regular Army to the Air Corps, effective June 22, 1940. All of these officers graduated on June 21st from the Advanced Flying School, Kelly Field, Texas. They are all graduates of the U.S. Military Academy, West Point, N.Y., 97 being graduates of the June, 1939, Class. The two exceptions are 1st Lieut. J. Paul Craig, Field Artillery, who graduated in June, 1937, and 2nd Lieut. Roy H.Brischetto, Infantry, who graduated in June, 1938. Lieut. Craig was assigned to duty as a flying instructor at the Primary Flying School, Randolph Field, Texas, while Lieut. Brischetto was assigned to duty at Hamilton Field, Calif.

Following the graduation of the 449 members of the 1939 Class of the U.S. Military Academy, 152 members thereof, in accordance with their preference, were assigned to the Air Corps for flying training. It will thus be noted that 64% of these 152 newly commissioned second lieutenants successfully completed the nine-months' flying course. The students who failed to complete the course were returned to the branch of the service in which they were originally commissioned.

The following tabulation shows the number of West Point graduates commissioned in the various branches of the service who were assigned to the Air Corps for flying training and the number graduating as pilots:

Branch of Service originally commissioned	Assigned to A.C.	Graduated	Pct.
Corps of Engineers	6	5	83.3
Signal Corps	11	10	91.1
Cavalry	25	11	44.0
Field Artillery	24	18	75.0
Coast Artillery	28	18	64.3
Infantry	58	35	60.3
Totals	152	97	64.0

The Air Corps Primary Flying School at Randolph Field, Texas, is receiving the bulk of these new Air Corps officers, 41 being assigned to that station for duty as flying instructors. The remaining 56 officers are assigned to the following stations, viz: Hamilton Field, Calif., 14; March Field, Calif., 20; Langley Field, Va., 15; Brooks Field, Texas, 7.

The names of these new Air Corps officers, their residences and the stations at which they are assigned to duty are given below, as follows:

To Randolph Field, Texas

Shepler W. FiztGerald,F.A.	Calif.
James L. McBride, Jr. CAC	Ft. McDowell,Calif.
Robert E. Greer, CAC	Huntington Beach,Calif.
George Y. Jumper, Cav.	Natoma, Calif.
Joseph H. Frost, FA	Pasadena, Calif.
Burnham L. Batson, Inf.	Manchester, Conn.
Andrew J. Kinney, CAC	Macon, Ga.
James B. Knapp, SC	Blandinville, Ill.
John C. Edwards, Inf.	Champaign, Ill.
Robert C. Twyman, SC	Galesburg, Ill.
John S. Samuel, CE	Hinsdale, Ill.
Lewis W. Stocking, Inf.	Rockford, Ill.
Ray J. Will, Inf.	Evansville, Ind.
Leonard N. Palmer, SC	Council Bluffs, Iowa
Robert C. Richardson,3d, Cav.	Ft. Riley, Kans.
Robert M. Wray, SC	Norton, Kans.
John L. McCoy, Inf.	Pratt, Kans.
Walter W. Farmer, CE	Ruston, La.
Perry M. Hoisington, Inf.	Baltimore, Md.
Charles J. Long, 3d, CAC	Chevy Chase, Md.
Robert C. Sears, Inf.	Springfield, Mass.
William T. Smith, CAC	Detroit, Mich.
Frank W. Iseman, Jr. FA	Ithaca, Mich.
George W.R. Zethren, FA	Fosston, Minn.
Allen F. Herzberg, SC	Cabool, Mo.
Ellsworth R. Jacoby, Inf.	Kansas City, Mo.
Carl W. Hollstein, Inf.	Spring Lake, N.J.
Robert J. Rogers, Inf.	New York, N.Y.
Thomas B. Whitehouse, Cav.	Rochester, N.Y.
Thomas J.J. Christian,Jr. FA	West Point, N.Y.
Donald R. Boss, CAC	Williamsville, N.Y.
Charles M. Walton, Jr. Inf.	Morganton, N.C.
Paul R. Okerbloom, SC	Columbus, Ohio
Leon R. Vance, Jr., Inf.	Enid, Okla.
Joseph G. Perry, CE	Lindsay, Okla.
Alfred V. Walton, Inf.	Shattuck, Okla.
William S. Boyd, Inf.	Butler, Pa.
Jack G. Merrell, Cav.	Jeanette, Pa.
Hugh A. Griffith, Jr. SC	So. Pittsburg, Tenn.
Tilden P. Wright, CAC	Littlefield, Texas
Walter J. Alsop, Inf.	St. George,Utah

To Brooks Field, Texas

Daniel F. Tatum, Inf.	Booneville, Ark.
Robert B. Miller, CAC	Clinton, Ill.
Frederick H.Foerster, CAC	Holyoke,Mass.
Benjamin F. Avery, Jr., Inf.	Aurora, N.Y.
Prentiss D. Wynne, Jr. CAC	Forest Hills, N.Y.
Richard S. Morrison, SC	Chillicothe, Ohio
Ernest B. Maxwell, FA	Fort Worth, Texas

To Langley Field, Va.

James D. Garcia, CAC	Del Norte, Colo.
Roger E. Phelan, FA	South Norwalk , Conn.
Maurice M. Miller, Inf.	Terrill, Iowa
Henry R. Sullivan, Jr.	Mt. Sterling, Ky.
Robert D. Hunter, Cav.	Albion, Neb.
Albert L. Evans, Jr., CAC	Fort Monmouth, N.J.
Salvatore E. Manzo, Inf.	Brooklyn, N.Y.
Raymond T. Peterson, Inf.	Flushing, N.Y.
Elwood P. Donohue, FA	Kingston, N.Y.
Matthew J. McKeever, Jr., Inf.	Westerleigh, NY
Eugene A. Romig, Inf.	Byesville, Ohio
Milton B. Adams, Inf.	Corpus Christi, Texas
William A. Garnett, Cav.	Gainesville, Texas
Joseph T. Kingsley,Jr. CAC	Falls Church, Va.
Charles H. Bowman, Inf.	Casper, Wyo.

To Hamilton Field, Calif.

Harry N. Brandon, CE	Little Rock, Ark.
James E. Mather, Cav.	San Mateo, Calif.
George E. Howard, SC	Ill.
Norman J. McGowan, CAC	Chicago, Ill.
Elbert O. Meals, CAC	Lincoln, Ill.
Cecil C. McFarland, Inf.	Wichita, Kans.
Laird W. Hendricks, CAC	Jacksonville, Fla.
Edwin J. Latoszewski, FA	Jackson, Mich.
Strother B. Hardwick,Jr. FA	Bertrand, Mo.
William K. Martin, Inf.	Atlantic City, N.J.
John G. Pickard, CAC	Philadelphia, Pa.
William L. McDowell,Jr. Cav.	Hico, Texas
Richard V.W.Negley,Jr.,Cav.	San Antonio, Texas
Melvin V. Engstrom, Inf.	Rawlins, Wyo.

To March Field, Calif.

Harmon Lampley, Jr., FA	Eufala, Ala.
Elmore G. Brown, Inf.	Sacramento, Calif.
David K. White, CAC	Montrose, Colo.
Warner W. Croxton,Jr., FA	Atlanta, Ga.
John W. Carpenter,3d, FA	Peoria, Ill.
Charles H. Hillhouse, FA	LaFayette, Ga.
Leonard N. Palmer, SC	Council Bluffs, Iowa
Robert R. Little, FA	Southgate, Ky.
Elliott Vandevanter,Jr.,Inf.	Baltimore, Md.
John E.L. Huse, Inf.	Bath, Me.
William C. Jones, Cav.	Manchester, N.H.
Adam K. Breckenridge,Cav.	Plattsburg, Mo.
John A. Chechila, SC	Skillman, N.J.
Joseph L. Dickman, Inf.	West Orange, N.J.
James A. Wilson, Inf.	North Baltimore, Ohio
Robert C. Whipple, Inf.	Erie, Pa.
Paul J. Long, Inf.	Patton, Pa.
Edwin P. Schmid, Inf.	Rapid City, S.D.
Richard G. Lycan, FA	Pullman, Wash.
Benoid E. Glawe, FA	Green Bay, Wisc.

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MOFFETT FIELD ATTRACTS MANY VISITORS

Public Relations activities at Moffett Field, Calif., showed a considerable increase during the early part of June, especially in view of the number of special groups visiting the field.

On four occasions the station played host to groups holding state and inter-state conventions in San Jose, 12 miles distant. California State postmasters, assembling in San Jose for their annual meeting, visited the field in a body as one of the big attractions on their convention program. They gathered at the 9th Air Base mess hall, where they had lunch, and later were taken to the giant hangar where they were shown the Pursuit ships, Bombers, Observation planes, and Basic and Advanced trainers.

Later in the month, the Fraternal Order of Eagles and the California State Veterinarians traveled to the Base to be shown over the field. Members of the Lions Club from California and Nevada were also guests on the field.

In addition to the activities on the field, representatives of the post went outside to take part in civic celebrations on two occasions. On Flag Day, the post sent a color guard, bearing the Flag and the colors of the 20th Pursuit Group to Palo Alto for ceremonies there. The same day, a detachment was sent to participate in the parade at San Jose. One hundred men and noncommissioned officers were in this mobile unit.

Officials at Moffett Field estimate that during the past few weeks more than 1500 persons visited the field in special groups.

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A large number of new recruits, assigned to Moffett Field during the past year, qualified in the Army's Alpha and mathematics tests.

In the period from May 1, 1939, to May 1, 1940, a total of 1560 men qualified in the Alpha test, while 1069 men passed the test in mathematics.

A SOLDIER'S PRIZE-WINNING ESSAY

Headquarters and Headquarters Squadron, 27th Bombardment Group, Barksdale Field, La., recently conducted an essay contest in the organization. The subject of the essay was: "What I expect to Realize in the Air Corps." Many entries were received, and in the final judging Private 1st Cl. Milton A. Duffey won first prize, and Private 1st Cl. Travis L. Goss, second prize. The prize-winning essay of Private 1st Cl. Duffey is given below, viz:

WHAT I EXPECT TO REALIZE IN THE AIR CORPS

"What I expect to achieve in the Air Corps" could be summed up in a very few words, such as, "Doing the job to which I might be assigned in such a manner that I will become an integral part of the Air Corps." But such a statement goes further than just the statement itself. It means that to achieve this, or any other such aim, I must first learn my job so thoroughly that there cannot be any doubt as to the perfect function of such a job. This is the first thing I expect to achieve.

First of all, we must have a sincere desire for any certain aim before we can expect to achieve anything, in any field. Next we must learn every phase of the job to which we might be assigned before we can expect to accomplish very much, and I expect to reach this certain aim by hard study.

I expect to specialize in one field continually. In my particular case, this is communications. It seems to the writer that a fast, accurate communication system is of the most vital importance to the Air Corps. It is a field that has unlimited possibilities and has much room for continual development and improvement. To be of much value to the Air Corps, and myself, I must first study and learn every phase of communications and keep abreast of the continual changes and improvements developing in this field from day to day.

The "Desire" for a certain thing and "Expecting to achieve it" are two different things. However, if we have a strong enough desire for a certain aim, we can achieve it by study and hard work. I not only have this desire, but sincerely expect to achieve the aim I have set for myself, - to become an expert on communications. I know this can be attained by a lot of hard study and work, and I am not afraid of either. I know there is a permanent place in the Air Corps for a soldier that knows his job a little better than the other man and executes it in such a manner that there are no mistakes or haphazard operations.

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Sixteen Reserve second lieutenants, who recently graduated from the Advanced Flying School, Kelly Field, Texas, reported for duty at Hamilton Field, Calif., on May 29th. They are scheduled to sail for Hawaii early in July.

"It is known," says the News Letter Correspondent, "that six out of the sixteen are in an excited state of mind. They plan to be married before sailing for foreign service."

LOWRY FIELD STUDENT HONORED FOR HEROISM

Colonel Jacob H. Rudolph, Commanding Officer of Lowry Field, Denver, Colo., will recommend to the War Department that the Soldier's Medal be awarded to Private George S. Farwell, Air Corps, for his act of heroism in rescuing an eleven-year old girl from drowning in City Park Lake, Denver, Colo., on June 8, 1940.

Private Farwell, a member of the 95th Bombardment Squadron, March Field, Calif., is enrolled in the Aircraft Armorers' course at Lowry Field. On the date of the incident, less than 24 hours after his arrival in Denver, he and a brother student, Private William D. Pollock, were strolling along the shore of City Park Lake. Attracted to the water's edge by the cries of Mr. and Mrs. Casey Espinosa, who had overturned their rowboat, the boys learned that 11-year old Alice Gregory had also fallen from the capsized boat and was submerged at a point about 25 feet from shore. Farwell immediately removed his clothes and dived into nine feet of water to recover the unconscious girl. After effecting her rescue, Private Farwell applied resuscitative measures and revived her. No other persons were in the vicinity until the rescue was completed. Private Pollock, Farwell's companion, and other witnesses testified that but for the timely action of Private Farwell Alice Gregory would have drowned at the bottom of the lake.

When police arrived, Farwell identified himself, then hastily donned his clothing and disappeared in the crowd. Radio commentators and newsmen remarked in their stories on Farwell's modesty and avoidance of publicity.

Private Farwell later received a personal commendation from Mayor Stapleton, of Denver. In the presence of Colonel Rudolph, the Mayor praised Farwell's performance. He said: "Your exemplary conduct reflects great credit on you and your organization."

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WEST POINTERS VISIT LANGLEY FIELD

Officers and enlisted men of the various organizations stationed at Langley Field, Va., were hosts on June 17th to a contingent of 150 students, representing the 1941 U.S. Military Academy graduating class, who started their summer session of military activity that morning with a tour of the Base Engineering Department, the 2nd Bombardment Group and the 8th Pursuit Group. Three groups of fifty men each were shown about the airdrome by the members of the cadet activity board, which consisted of Lieut. Colonel Clyde V. Finter, Major E.A. DeWitt, Captain Kenneth G. Gould, 2nd Lieuts. Harvey C. Dorney, John P. Healey, Cyrus W. Kitchens, Jr., and Keith K. Compton.

The visiting students from up the Hudson valley began the day's chore at 7:45 o'clock that morning with a visit to the Base Engineering Department, where the importance of the machine shop, aero repair and wood working sections was described. Later the cadets were shown the numerous types of airplanes assigned to the 2nd Bombardment and the 8th Pursuit Groups.

At 9:20 a.m., a truck convoy carried the cadets from the apron in front of the Base Engineering shop to Messick Point to observe heavy demolition bombing and aerial machine gun demonstrations by flyers of the 8th Pursuit and 2nd Bombardment Groups.

The afternoon activity for the cadets included rides in the modern B-17 "Flying Fortresses" of the 2nd and 25th Groups on routine training flights. Other recreational activities were on hand for the visiting future generals who were not engaged in flying.

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NEW OFFICERS FOR 2ND BOMBARDMENT GROUP

With the arrival on June 3rd of 23 new officers from Brooks and Kelly Fields, an intensive period of training was started. Up to the present, practically every hour of the day these new officers are in classrooms receiving instruction in many phases of ground training or in the air receiving instruction in bombing, machine gun operation, formation flying, and transition training on multi-engined aircraft - all those factors that are necessary to become a well informed ... officer and pilot in heavy bombardment.

The new arrivals are members of Class 40-B graduating from the Advanced Flying School, Kelly Field, Texas, on May 11, 1940, and who were commissioned second lieutenants in the Air Reserve. They are:

Lincoln E. Behling, William M.Bowden, Winfred O. Craft, James O. Cobb, Joe G. Gillespie, Jr., A.J. Hanlon, Jr., Isaac J. Haviland, Jr., John B. Holst, David A. Hornby, Carl A. Hustad, Robert N. Keatts, James H. Keenan, John N. Lavin, Otto B. McIver, Chester H. Morneau, Mitchell J.B. Mulholland, Douglas C. Northrop, Everett J. O'Connor, William W. Ottinger, Paul M. Person, John N. Toomey, Clinton W. Uhr, Craig E. Walling.

The May 11th graduating class consisted of two officers of the Regular Army and 211 Flying Cadets.

GRADUATION OF CLASS 40-C FROM ADVANCED FLYING SCHOOL

The class of student officers and Flying Cadets which began training at the nine elementary civilian flying schools in September, 1939, graduated from the Advanced Flying School, Kelly Field, Texas, on June 21, 1940. A total of 410 students (officers and Flying Cadets) began the nine-months' course of flying training, and of this number 99 officers and 137 Flying Cadets, total 236, graduated.

The list of the officers who graduated is given elsewhere in this issue of the News Letter. The Flying Cadets who graduated are listed below, as follows:

Knudson, Cecil Cephas	2	Phoenix, Ariz.
Evans, Claude F.	5	Berkeley, Calif.
Craig, Richard M.	2	Burbank, Calif.
Thacker, Robert Eli	2	El Centro, Calif.
Pengelly, Wilfred Richard	5	Fresno, Calif.
Ault, Richard Leroy	5	Long Beach, Calif.
Allen, Bruce G.	4	Los Angeles, Calif.
Baldwin, Robert P.	5	Los Angeles, Calif.
Smith, Bernard P.	1	Los Angeles, Calif.
Williams, Duward J.	2	Los Angeles, Calif.
James, Albert William	2	National City, Calif.
Graham, Donald W.	5	Oakland, Calif.
Meyer, Philip Carl	5	Oakland, Calif.
Tolhurst, Charles Edward	5	Oakland, Calif.
Clark, Walter E.	5	Ontario, Calif.
Hewins, Charles F.	5	Pasadena, Calif.
McPherson. Donald G.	5	Pasadena, Calif.
Smith, Fred Myron	2	Pomona, Calif.
Clarke, Owen Field	4	San Diego, Calif.
McIntyre, Bryce W.	5	San Diego, Calif.
Keeling, Gerald F.	5	Fort Collins, Colo.
Oyler, George Clinton	5	Fort Collins, Colo.
Foster, Leo J., Jr.	2	Denver, Colo.
Gadd, Wesley P.	5	Waterford, Conn.
Baggott, Frederick Ward	3	Panama City, Fla.
Corbin, Charles Culver	1	Macon, Ga.
Van Mullen, Louis D.	5	Chicago, Ill.
Warden, Clifford Vincent	5	Chicago, Ill.
Seldon, Wilson Joe	5	Champaign, Ill.
Perry, Leland Dale	4	Clane, Ill.
Rawls, David Gray	2	Dixon, Ill.
Nelson, Robert Leonard	1	Moline, Ill.
Potter, Frank W.	2	Moline, Ill.
Marr, Jack Franklin	5	Oak Park. Ill.
Burge, Edward Longfellow	4	Urbana, Ill.
Giffin, Morgan Allen	5	Rantoul, Ill.
Richards, Robert Harding	4	Indianapolis, Ind.
Morris, James W.	5	West Lafayette, Ind.
Larson, Harold J.	4	Clear Lake, Iowa
Linder, Kenneth A.	5	Oakland, Iowa
Faust, Carl W.	2	Emporia, Kans.
Casper, Kenneth Dan	2	Humboldt, Kans.
Park, James Sevier	4	Louisville, Ky.
Back, Klair E.	5	Whitesburg, Ky.
Foster, Marion H., Jr.	3	Alexandria, La.
Loane, Ernest W., Jr.	5	Presque Isle, Me.
Davis, Clay R.	2	Baltimore, Md.
Fletcher, Arthur Amos, Jr.	2	Brentwood, Md.
Steadman, Beverly E.	5	Junction City, Kans.
Carlson, Earl D.	2	West Newton, Mass.
Berry, Austin Luther	2	Belding, Mich.
Colovin, James Edward	4	Mackinaw City, Mich.
Tuma, Edward James	2	Brimson, Minn.
Powell, Harvard Wendell	2	Duluth, Minn.
Patterson, James T.	5	Minneapolis, Minn.
Hild, Fred Edward	5	Minneapolis, Minn.
Cool, Paul E.	4	Pontiac, Mich.
Barr, Bernice S.	2	Boyle, Miss.
Eakes, Raymond Timothy	1	Philadelphia, Miss.
Walter, Harvey S., Jr.	5	Columbia, Mo.
Horgan, Maurice Chapman	2	Joplin, Mo.
Barnes, Carl R.	5	Kansas City, Mo.
McDavid, Andrew Eugene	4	McComb, Miss.
Greiner, Paul E.	2	Butte, Mont.
Blankenhorn, Chas. E., Jr.	4	Great Falls, Mont.
Jaynes, Roy A.	5	North Platte, Nebr.
Flesher, Robert E.	5	Omaha, Nebr.
Reichstadt, Robert	4	Omaha, Nebr.
Riordan, Leonard D.	4	Omaha, Nebr.
Pease, Harl, Jr.	4	Plymouth, N.H.
McKenna, Robert E.	3	Kearney, N.J.
Zubko, Boris M.	4	Kearney, N.J.
Hundt, George R., Jr.	2	Trenton, N.J.
Kirkup, Joseph K.	3	Bay Shore, L.I., N.Y.
Lawrence, Henry J.	5	Long Island, N.Y.
Hubbard, Edward George	5	New York, N.Y.
Shapiro, Leonard	3	New York, N.Y.
Walmsley, Hallock P.K.	3	New York, N.Y.
Ball, Alfred John, Jr.	3	Jamaica, N.Y.
Eaton, Frederick C., Jr.	2	Scarsdale, N.Y.
McCurdy, Leon H.	5	Sheds, N.Y.
Smith, Robert T.	5	Lincoln, Nebr.
McCarten, Robert Damien	2	Fargo, N.D.
Johnson, Kenneth Leonard	5	Jamestown, N.D.
Van Sickle, Wendell Mac	5	Akron, Ohio
Lavelle, John D.	5	Cleveland, Ohio
DeJohn, Benedict Desmond	5	Cleveland, Ohio
Eakin, Ralph David	1	Cleveland Heights, Ohio
Pelton, William Allen	5	Cleveland Heights, Ohio
Murray, John Edward	1	Columbus, Ohio
Conway, Daniel R.	5	Shaker Heights, Ohio
Sprinkle, Thomas W.	5	Wilmington, Ohio
Fish, Robert William	4	Peoria, Ohio
Alleman, Virgil Calvin	4	Bristow, Okla.
Tidwell, Ralph McKinley	2	Durant, Okla.
Kelsay, Clyde Bruce	2	Marlow, Okla.
Hubbard, James H.	2	Chickasha, Okla.
Ahern, Robert U.	5	El Reno, Okla.
Stephens, Dorwood Cecil		Norman, Okla.
Kelly, Thomas C., Jr.	1	Oklahoma City, Okla.
Wilcox, Roland M.	3	Oklahoma City, Okla.
Carmack, Beverly E.	5	Oklahoma City, Okla.
Wilson, Richard R.	1	Oklahoma City, Okla.
Lasselle, Dale	5	Sherwood, Ore.
Lehnhard, Donald F.	1	Glenshaw, Pa.
Coffey, Robert Lewis, Jr.	3	Johnstown, Pa.
Tiller, Francis Eugene	2	Aiken, S.C.
Boatwright, Lewellyn T., Jr.	5	Columbia, S.C.
Mitchell, Harry Leonard	2	Spartanburg, S.C.
Otey, Kirkwood, III	3	Sumter, S.C.
Pittman, Paul Cochran	4	West Durham, S.C.
Wright, Allen Murray	5	Dyersburg, Tenn.
Large, William Robert, Jr.	5	Baytown, Texas
Surles, Donald C.	2	Cisco, Texas
Boedecker, Charles W.	5	Dallas, Texas
Daugherty, Jean H.	2	Dallas, Texas
McAuliff, Jack	5	Dallas, Texas
Hastings, Harold Thomas	4	Denison, Texas
Walker, Leo N.H.	2	Houston, Texas
McCauley, Harris K.	2	Lubbock, Texas
Katterjohn, Henry M.	5	Port Neches, Texas
Doolittle, Glen Alden	2	San Antonio, Texas
Luetcke, Carl J., Jr.	5	San Antonio, Texas

Lowry, Leon Lloyd	5	Plainview, Texas
Elder, James Allen	4	Wichita Falls, Texas
Johnson, Loren Lavar	4	Payson, Utah
Egan, John L.	5	Logan, Utah
Alston, Jack H.	5	Salt Lake City, Utah
Beall, Warren Sheldon		Seattle, Wash.
Greene, Paul James	5	Seattle, Wash.
Hanson, Melvin Richard	2	Spokane, Wash.
Forman, Wade Klet	3	Albright, W.Va.
Mino, Raymond William	5	Anawalt, W.Va.
Patton, Robert A.	5	Ronceverte, W.Va.
Cooper, Earl James	4	Stevens Point, Wisc.
Best, Everett W.	5	Powell, Wyo.
McBride, George Herman	1	Atlanta, Ga.

The numeral following each name on the above list represents the Air Corps station at which the graduate was assigned to extended active duty under his status as a second lieutenant in the Air Reserve, viz:

1. Brooks Field, Texas
2. Hamilton Field, Calif.
3. Langley Field, Va.
4. March Field, Calif.
5. Randolph Field, Texas.

As will be noted from the above list, California, with a total of 19, leads the States in representation of native sons in the graduating class, followed by Texas with 12; Illinois and Oklahoma, 10 each; Ohio, 9; New York, 8; Nebraska and South Carolina, 5 each; Minnesota, 4; Michigan, Mississippi, Missouri, New Jersey, Utah, Washington and West Virginia, 3 each. None of the other States is represented by more than two graduates.

Among the cities represented in the graduating class, Cleveland, Ohio, and its vicinity, leads with 5 students, followed by Los Angeles, Calif., and Oklahoma City, Okla., with 4 each; Omaha, Neb., New York City and Dallas, Texas, 3 each. None of the other cities are credited with more than two graduates.

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COURSE IN AERIAL PHOTOGRAPHY FOR OFFICERS

Six officers began a course in Aerial Photography at Lowry Field, Denver, Colo., on July 1st. The class will run for a period of six months and will cover the full course of subjects from photographic chemistry and optics to the operation of the most intricate aerial cameras. The course will also include the essentials of aerial photographic mosaic mapping, and in that respect this class is very fortunate in having an opportunity to study under Captain Edward F. Kumpe, Corps of Engineers, who is a recent addition to the school faculty and who will treat the subject of Aerial Mapping with a view to coordinating it with the needs and activities of the Corps of Engineers. Military authorities have long recognized the need for such coordination, and Captain Kumpe's activity at the School of Photography should do much to fill this need.

Making up the class are the following Air Corps officers: 2nd Lieuts. M.R.Schoephoester, Bolling Field, D.C.; Albert M. Welsh, Maxwell Field, Ala.; James F. Setchell, Scott Field, Ill.; P.C. Shauer, Mitchel Field, N.Y.; Karl Polifka, Moffett Field, Calif.; and Thomas D. Brown, Fort Lewis, Wash.

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WAR DEPARTMENT SPECIAL ORDERS
Changes of Station

To Brooks Field, Texas: Captain Richard C. Lindsay, from 97th Observation Squadron, Mitchel Field, N.Y., to duty with 22nd Observation Squadron.

To Chanute Field, Ill.: Major Harry A. Johnson, from duty as student at Naval War College, Newport, R.I.

To Fort Monroe, Va.: Major Arthur I. Ennis, from Office of the Chief of the Air Corps, Washington, D.C., for duty with the Staff and Faculty of the Coast Artillery School.

To Fort Lewis, Wash.: Colonel Robert E.M. Goolrick, from Moffett Field, Calif.; Captain George G. Northrup, from McChord Field, Wash., for duty with 1st Photographic Squadron.

To Langley Field, Va.: 1st Lieut. Arthur A. Fickel, from Mitchel Field, N.Y.

To Lowry Field, Colo.: Lieut. Col. Early E.W. Duncan, from assignment and duty at Athens, Greece.

To Long Beach, Calif.: 2nd Lt. Wm. L. Travis, from March Field, Calif., for duty with Organized Reserves, 9th Corps Area.

To London, Eng.: Lieut. Col. Frank O'D. Hunter, for duty as Assistant Military Attache and Assistant Military Attache for Air, American Embassy, from duty in similar capacity in France.

To MacDill Field, Tampa, Fla.: 2nd Lieut. Richard A. Livingston, from Barksdale Field,La.

To Moffett Field, Calif.: Colonel Henry W. Harms, from Headquarters, 9th Corps Area; Majors Leland R. Hewitt, from Randolph Field, Texas; David M. Schlatter and 1st Lieut. Harvey P. Huglin, from Kelly Field, Texas, all for duty at West Coast Air Corps Training Center.

To Montgomery, Ala.: Lieut. Col. Floyd E. Galloway, from Army War College, to duty at Southeast Air Corps Training Center.

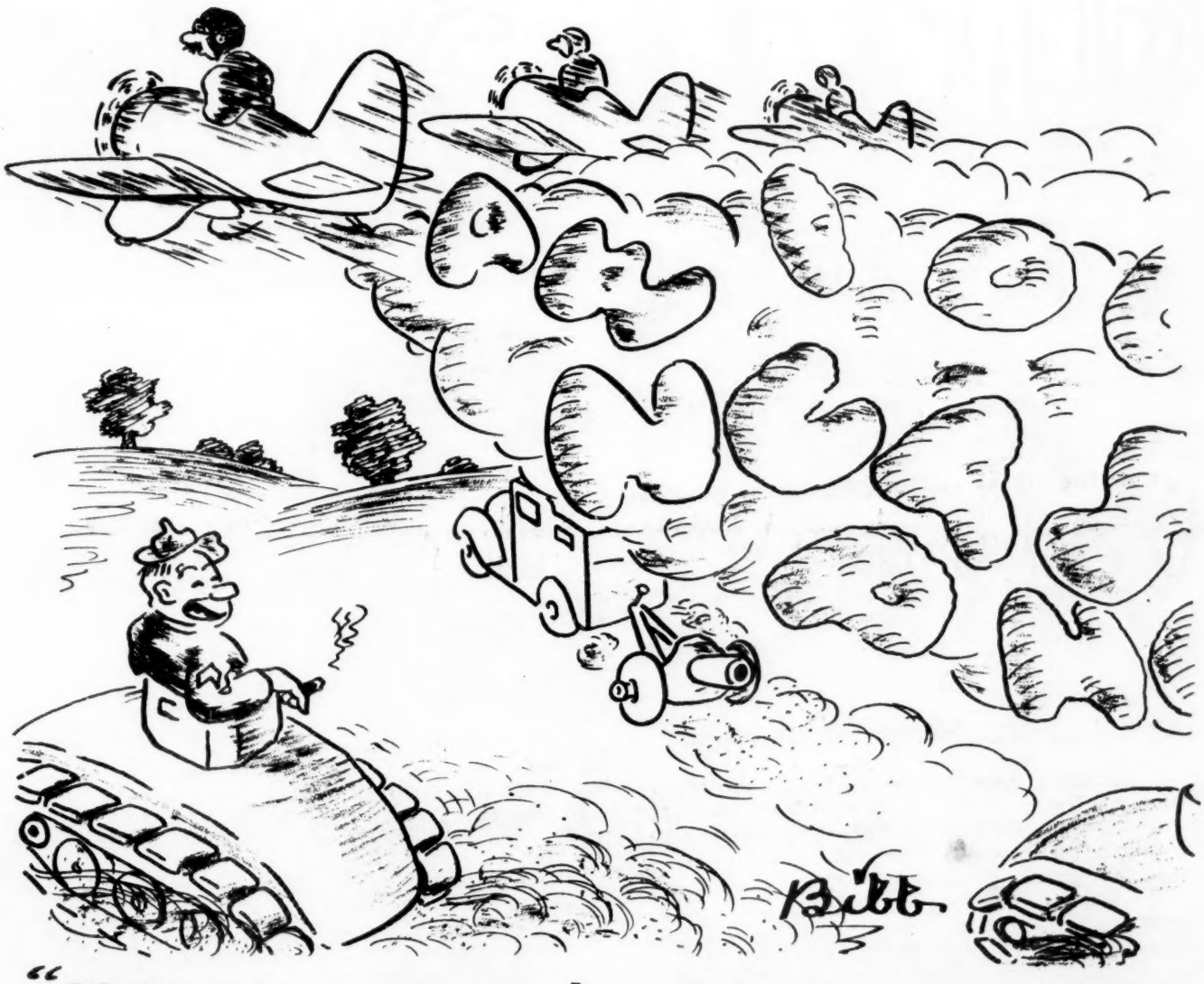
To Oxnard, Calif.: 2nd Lieut. John R. Kilgore, from Allan Hancock College of Aeronautics Santa Maria, Calif.

To Washington, D.C.: Major John DeF. Barker, from duty as instructor, Command and General Staff School, Ft. Leavenworth, Kans., to duty in the Office of the Chief of Staff; Major Pardoe Martin, from detail with Organized Reserves, 9th Corps Area, Long Beach, Calif., to duty in the Office of the Chief of Air Corps.

To Wright Field, Ohio: Major Charles W. Steinmetz, from duty as Asst. District Supervisor, Central Air Corps Procurement District, Dayton, Ohio, and Major Edward H. White, from Office of the Chief of the Air Corps, Washington, D.C., for duty with Materiel Division; Captain Alfred R. Maxwell, for duty as Assistant Commandant, Air Corps Engineering School.

To Stockton, Calif.: Colonel Leo A. Walton, from duty as Instructor, Air Corps Tactical School, Maxwell Field, Ala., to duty at the West Coast Air Corps Training Center.

To West Point, N.Y.: 1st Lt. Marshall Bonner from Kelly Field, for duty at U.S.Mil.Academy.



"SOMEBODY MUST'A MIXED ALPHABET SOUP IN HIS LIQUID SMOKE!"